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Education and Culture DG

Lifelong Learning Programme

Skills for a Low Carbon Economy: **what next?**

GT VET Greening Technical VET – Sustainable Training Module for the European Steel Industry

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CEDEFOP

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for the Development
of Vocational Training



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GT VET Objectives

- identify and anticipate **impacts of environmental legislation in everyday work** of skilled workers, both for today and future;
- timely and responsive **implementation of new mandatory skills** within VET systems (national and industry related);
- **match demands of industry with the VET system**, obtaining European learning outcomes on green skills and sustainable awareness within technical VET;
- investigate the scope for the development of **ongoing and responsive training pathways**;
- develop a model of an **industry driven and run European sustainable training module**, focusing on skills for environmental sustainability;
- **adapt and test the module** within four steel companies and member states (United Kingdom, Poland, Italy and Germany);
- use the example of the steel industry and the VET of mechanical and electrical technicians for adaptation and **transfer to other technical professions and production industries**;
- produce a **blueprint for the implementation** (process) of new skills for the industry sector and appropriate VET systems.

Partnership: Steel Companies and Research Institutes

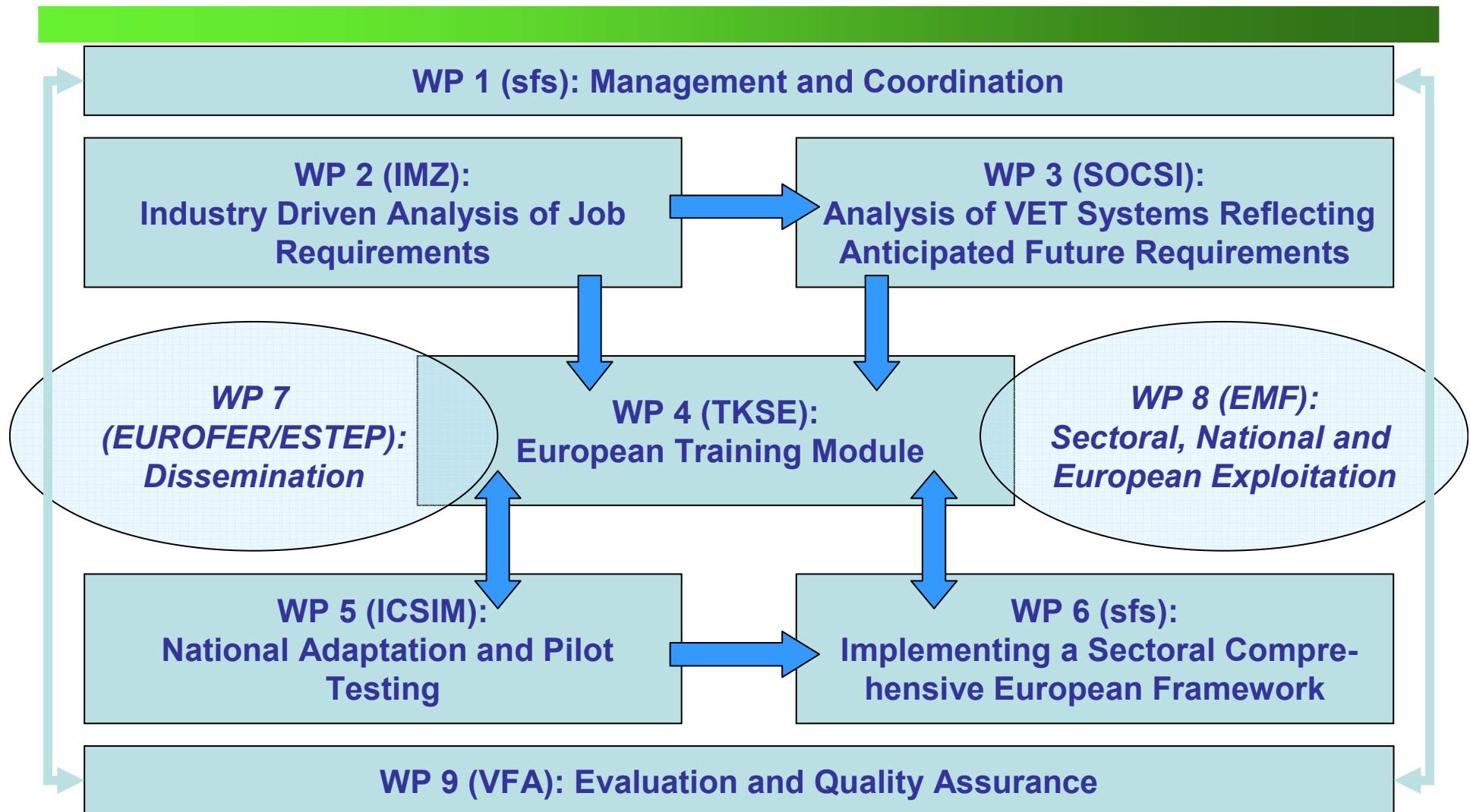
- **Germany:**
sfs – TU Dortmund (Coordinator)
ThyssenKruppSteel Europe AG, Duisburg
- **Poland:**
Instytut Metalurgii Żelaza IMZ, Gliwice
ArcelorMittal Poland S.A., Dabrowa Górnicza
- **Italy:**
Istituto per la Cultura e la Storia d'Impresa ICSIM, Terni
ThyssenKrupp Acciai Speciali Terni AST, Terni
- **UK/Wales:**
Cardiff School of Social Sciences, Cardiff University
Tata Steel UK, Port Talbot
- **Strategic Partners (Dissemination and Valorisation):**
European Steel Association EUROFER, Brussels
European Metalworkers' Federation EMF, Brussels
- **External Evaluation:**
VFA – Development and Innovation Consultants, Athens
Jean-Claude Charbonnier (Consultant)



Relevance of GT VET

- In line with **basic European strategies**: lifelong learning, new skills for new jobs, EU 2020 strategy, Lisbon strategy;
- And **EU environmental directives** (IPPC, GHS, REACH, ...), national and company guidelines and recommendations;
- Improving the **European and national VET-system** by short term and industry driven pathways between industry demands and national VET systems;
- And in line with actual steel **industry requirements**: recruitment and training

Consecutive Work Plan



Industry Driven Job Requirements (I)

1. Environmental (and related health and safety) **legislation** and company implementation:
 - Knowledge centre for environmental issues in all major steel companies
 - European contact point / bureau, environmental networking in Brussels
 - “Translation” of legal requirements into procedural instructions, handbooks
 - Good practice examples for “application-oriented diffusion” can be identified → every employee has to understand the message
 - Strict corporate targets (“no accidents”) exceeding legal requirements to some extent → from complying to improving
 - Steering approach through highly diversified target figures on company / department / plant level
 - High influence of instructions on everyday work

Industry Driven Job Requirements (II)

2. Responsibility for environmental (and related health and safety) issues:

- Distinct departments for environmental issues and occupational health and safety
- Hybrid working groups meet and define implementation pathways
 - to comply with new legal directives
 - to integrate new requirements into training (VET, further training)
- Differences in autonomy of plants
 - E.g.: TKSE plants have recently installed their own environmental representative
- “Culture” of shared responsibility
 - Skilled workers are more and more considered as responsible for “green performance”

Industry Driven Job Requirements (III)

3. Environmental/green aspects of **skilled work** within the plant (electrical and mechanical Technicians):
- Environmental regulations influence basically every maintenance routine
 - Extensively integrated in
 - VET and further training
 - Plant protocols / operational instructions
 - Additional “green projects” to improve environmental performance
 - Training more and more resembles everyday work (integrative learning approach, autonomous problem solving and reflection as pedagogic concepts gaining importance)

Curricula and Green Skills Reference

- A varied set of policies and practices (curricula) exist leading to different levels of competence, skills and knowledge across the case study countries
- Main challenges:
 - changing (environmental) workplace cultures – driven by efficiency imperatives → improving actions, saving Money
 - sections and managers determine levels of relevance
 - ‘trickle down’ of wider policy goals

European Training Module (I)

Develop action-oriented green skills projects

- First definition of **European standards** concerning green skills/awareness in technical professions
- **Green contents:** energy; resources; waste; pollution; lifecycle assessment (use and disposal of hazardous substances seem to be covered enough in current learning processes)
- **Learning goals:**
 - Strong emphasis on strengthening green awareness
 - Learning outcomes must be tangible
 - If feasible, combining cognitive learning and manual learning
 - Create useful work pieces which foster sustainable learning

European Training Module (II)

- **Green skills** for technical VET in the European steel industry:
 - technical skills and appropriate awareness for environmentally sustainable behaviour
 - to prevent and reduce negative impacts on the individual and environment (neighbourhood, employees, air, water and ground)
 - caused or initiated by operations and work in and around steel production.
- **Knowledge, abilities and attitudes:**
 - to save and reduce input of resources, particularly energy and raw materials.
 - to prevent and reduce emissions, pollution and noise.
 - to utilize, store and dispose of waste materials in a manner that conforms with best practice environmental procedures and understands the consequences of nonconformity.
 - to understand the value, impact and lifecycle of resources and materials.
 - to keep track of current standards and best available techniques.

Matrix: Learning Fields / Knowledge Levels

	Basic knowledge	Understanding of backgrounds and contexts	Process oriented expertise	Experience based competences
Energy reduction	<p>Cases, concrete contents, projects etc.</p> <p>from a workplace perspective, from everyday work</p> <p>(considering related didactical aspects)</p>			
Emission prevention and reduction				
Handling, storage, removal of waste				
Value and lifecycle of materials and resources				
Actual standards and available best techniques, technologies				

Policy Requirements

- **Flexible ways and leeway to include** industry driven **modules** of VET
- **Overarching European wide learning objectives** based on an industry related **European definition of green skills**
- ECVET as a **European wide and accepted certification** of the training modules
- **Cooperation and involvement** of companies and vocational schools **at the regional level**, where people live, work and learn
- “Traditional” production industries should be considered in **European advanced manufacturing** activities much more



Thank you!

<http://www.gt-vet.com>

www.sfs-dortmund.de



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